

## SeaWiFS Science Team Meeting

The SeaWiFS Science Team Meeting has been organized to accomplish the following objectives: 1) to familiarize each member with the goals and proposed science of other team members; 2) to brief the Science Team on the current status of the SeaWiFS Project and provide an opportunity for the Science Team to make recommendations on issues facing the SeaWiFS Project; and 3) to assemble representatives of the wider ocean color community so a more integrated approach to bio-optics can be established.

The meeting will run four full days January 19-22 with one evening session. All attendees must register. Registration will be held Monday evening and every morning starting at 0700. A \$20 meeting registration fee will be collected when you register. There will be two breaks every day, one at 1000 and the other at 1500. In general, the breaks will last 15 minutes, except when everyone is meeting in smaller sessions, in which case they will last 30 minutes. Dinner will always be scheduled at 1730, and lunch will always be scheduled from 1200-1300, except for the first day when an extended luncheon will be hosted from 1100-1230. This longer luncheon is included, so everyone has a chance to mingle and meet. The evening session will begin at 1930 and adjourn at 2100.

During the first two days and the final day, everyone will meet in a plenary session in the ballroom. During the latter part of the second day and all of the third day, the participants will be meeting in smaller sessions. The former will be devoted to scientific summaries from each member of the Science Team, while the latter will be devoted to Project discussions in working groups. The summary talks will be held in two rooms partitioned from the ballroom. The working groups will be held in three rooms and a fourth room will be available for impromptu discussions. During the day, three of the rooms will be created from the ballroom and the location of the fourth room will be posted; during the evening the location of the four rooms will be posted—the ballroom is not available during the evening. If an evening session is not scheduled, a room will always be available for impromptu discussions.

All smaller sessions will run concurrently, so meeting participants will have to make a choice as to which scheduled session to attend. The scientific summaries will be presented alphabetically and the working groups will be presented to keep the concurrent topics diverse enough to minimize conflicts, but, of course, it is not possible to resolve all of them. Each working group will be chaired by a Project representative and co-chaired by a Science Team member. The chairman will be responsible for setting the working group's initial agenda, and then both chairmen will update the agenda as the meeting progress, direct the session, and summarize the salient issues and recommendations of the working group for the plenary. A scribe or secretary will be assigned to each session. Working groups will be the primary opportunity for discussion and resolution of action items—there is not enough time during presentations to allow every voice to be heard and every problem to be resolved.

Unscheduled time has been purposely included during every working group session so impromptu groups can meet. For simplicity, Session D will always be available for these ad hoc meetings.

and the evening session only has one scheduled working group, so there is extra time during this period as well. A sign-up sheet will be posted on the Session D meeting room door, so groups can determine when the room is available.

A computer room staffed by Dan Endres from the SeaWiFS Project will be accessible to all meeting participants. At least one PC and several Macintoshes with laser printers will be available. The Macintoshes will be on an AppleTalk network with spare cabling, so participants can connect their own PowerBooks if they wish. A phone line will also be connected to a PowerBook if anyone needs to check telemail or connect to a network via modem.

*Monday, 18 January* is devoted to registering the participants from 1800–2100. An icebreaker party with a cash bar will also be held during this period. The icebreaker will be in the atrium next to the ballroom in the Governor Calvert House.

*Tuesday, 19 January* is the first meeting day. During the morning, introductions will be made and mission overviews from NASA Headquarters, NASA GSFC, the SeaWiFS Project, and Orbital Sciences Corporation (OSC) will be given. After the luncheon, perspectives from other government agencies will be given followed by a series of 20-minute talks detailing various baselines for the most important elements of the Project. Also included in these talks will be presentations by those investigators under contract with the Project. The baselines presented in these Project and contract presentations will establish what action is being pursued for the fundamental issues facing the Project. The baselines will be the motivation for determining whether or not the Project is meeting Project objectives and the concerns of the wider community. If not, the appropriate modifications to the Project's approach will be determined in a working group session.

*Wednesday, 20 January* is a mixture of presentations. In the morning, the Project will complete the talks started on Tuesday. The afternoon is reserved for science talks from team members. These will be AGU-style talks devoted to 8-minute timed summaries of what each team member is funded to do plus 2 minutes to change speakers. The talks will be given in two different rooms organized as concurrent sessions.

*Thursday, 21 January* is devoted to working group meetings—four meetings during the day and one in the evening. There will be four sessions associated with each scheduled meeting. One of the sessions will always be open for impromptu working groups.

*Friday, 22 January* resumes the plenary session. In the morning, issues and agreed upon actions from the various working group leaders will be presented for discussion and approval. At 1145 the plenary session will adjourn so participants can board buses for the afternoon tours: one will be held at OSC and the other at GSFC. The former will allow participants to see space hardware and OSC's facilities, while the latter will be devoted to Project demonstrations and tours of GSFC's facilities. To get people from GSFC to Baltimore-Washington International (BWI) airport, a shuttle will leave Building 28 every hour on the hour starting at 1400 and continuing until 1800. The last bus for BWI and a return shuttle to Annapolis will both leave Building 28 at 1800.

# SeaWiFS Science Team Meeting Agenda

January 19-22, 1993

Annapolis, Maryland

## Monday, 18 January

1800 Registration, Icebreaker with Cash Bar

2100 *Evening Adjournment*

## Tuesday, 19 January

0700 Continental Breakfast, Registration

0800 Welcome, Logistics

0810 NASA Headquarters Perspective

0825 SeaWiFS and the NASA Ocean Color Program

0840 SeaWiFS Within GSFC Perspective

0855 SeaWiFS Project Baselines, Status, and Introductions

0925 Science Goals, Objectives, and Data Products

0945 OSC and the SeaStar Mission

1000 *Break*

1015 SeaStar Mission Status

1040 SeaWiFS Sensor Status

1100 *Luncheon*

1230 Agency Introductions

1235 The NAVY Perspective

1250 The NSF Perspective

1305 The NOAA Perspective

1320 The ONR Perspective

1335 The DOE Perspective

1350 SeaWiFS and MODIS Introductions

1400 Mission Operations Baseline

1420 Data Acquisition Baseline

1440 Data Processing Baseline

1500 *Break*

1515 Calibration and Validation Baseline

1535 Acceptance Tests Baseline

1555 Field Validation and Deployment Baseline

1615 Atmospheric Correction

1635 Optical Buoy Time Series

1655 Case 1 Algorithm Baseline

1730 *Evening Adjournment*

W. Esalas

D. Butler

F. Muller-Karger

V. Salomonson

R. Kirk

W. Esalas

A. Elias

*OSC Pegasus Video*

K. Lyon/H. Runge

R. Roberts

W. Esalas

D. Montgomery

M. Reeve

K. Sullivan

R. Spinrad

G. Saunders

W. Esalas

W. Gregg

C. Vermillion

G. Feldman

*Lewis P-3 Video*

C. McClain

W. Barnes

S. Hooker

H. Gordon

D. Clark

D. Clark

## SeaWiFS Science Team Meeting Agenda *cont.*

### Wednesday, 20 January

- |   |                   |
|---|-------------------|
| 0700 Continental Breakfast, Registration                        |                   |
| 0800 Introductions  | W. Esaias         |
| 0810 Case 2 Algorithm Baseline                                  | K. Carder         |
| 0830 Processing Software  | R. Evans          |
| 0850 Transfer of Radiometric Scales to Orbit and <i>In Situ</i> | R. Barnes         |
| 0910 Sensor Calibration and Characterization Baseline           | R. Barnes         |
| 0930 Calibration of Optical <i>In Situ</i> Instruments          | J. Mueller        |
| 1000 <i>Break</i>   | <i>MOBY Video</i> |
| 1030 Quality Control of Data Products Baseline                  | C. McClain        |
| 1050 Data Archive and Delivery Baseline                         | D. Zukor          |
| 1200 <i>Lunch</i>   |                   |
| 1300 Science Team Member Summaries                              |                   |
| Session 1: Abbott, Arrigo, Balch, Bidigare, Carrada,            |                   |
| Davis, Esaias, Frouin, Garcia, Halpern,                         |                   |
| Hoge, Kamykowski  |                   |
| Session 2: Aiken, Barton, Bishop, Brown, Cota,                  |                   |
| Doerffer, Falkowski, Fukushima, Glover,                         |                   |
| Hofmann, Iverson, Klefer  |                   |
| 1500 <i>Break</i>   |                   |
| 1530 Science Team Member Summaries <i>cont.</i>                 |                   |
| Session 1: Kishino, Korotaev, Lewis, Matsumura,                 |                   |
| Mitchell, Mueller, Parslow, Shillington,                        |                   |
| Slater, Sturm, Trees, Walsh, Wernand,                           |                   |
| Yoder   |                   |
| Session 2: Kopelovich, Lara-Lara, Luther, McClain,              |                   |
| Morel, Muller-Karger, Sakshaug, Siegel,                         |                   |
| Smith, Tindale, Unluata, Wastenson,                             |                   |
| Yentsch, Zaneveld   |                   |
| 1730 <i>Evening Adjournment</i>                                 |                   |

## SeaWiFS Science Team Meeting Agenda *cont.*

### Thursday, 21 January

- |      |   |                        |
|------|---|------------------------|
| 0700 | Continental Breakfast, Registration                                       |                        |
| 0800 | Science Working Group Meetings  |                        |
|      | Session A: HRPT Policies and Real Time Access                             | R. Kirk/O. Brown       |
|      | Session B: Round-robin Calibration of Optical Instruments                 | C. McClain/J. Mueller  |
|      | Session C: Data Products and Adding New Products                          | W. Esaias/C. Yentsch   |
|      | Session D: Open for Impromptu Working Groups                              | TBD                    |
| 1000 | <i>Break</i>  |                        |
| 1030 | Science Working Group Meetings <i>cont.</i>                               |                        |
|      | Session A: Data Policy, Rights, and Obligations                           | W. Esaias/W. Balch     |
|      | Session B: Field Deployments, <i>In Situ</i> Data Validation, and Formats | S. Hooker/D. Clark     |
|      | Session C: Algorithm and Product Validation & Binning                     | C. McClain/A. Morel    |
|      | Session D: Open for Impromptu Working Groups                              | TBD                    |
| 1200 | <i>Lunch</i>  |                        |
| 1300 | Science Working Group Meetings <i>cont.</i>                               |                        |
|      | Session A: HRPT Ground Station Technology                                 | C. Vermillion/M. Lewis |
|      | Session B: SeaWiFS Sensor Acceptance & Calibration                        | W. Barnes/H. Gordon    |
|      | Session C: Data Distribution and Access                                   | D. Zukor/D. Glover     |
|      | Session D: Open for Impromptu Working Groups                              | TBD                    |
| 1500 | <i>Break</i>  |                        |
| 1530 | Science Working Group Meetings <i>cont.</i>                               |                        |
|      | Session A: Optical Protocols Revisions                                    | W. Esaias/J. Mueller   |
|      | Session B: SeaWiFS Mission Operations                                     | W. Gregg/R. Evans      |
|      | Session C: Software Policy and Availability                               | G. Feldman/M. Abbott   |
|      | Session D: Open for Impromptu Working Groups                              | TBD                    |
| 1730 | <i>Dinner</i>   |                        |
| 1930 | Science Working Group Meetings <i>cont.</i>                               |                        |
|      | Session A: EOS Color Mission and White Paper                              | W. Esaias/M. Abbott    |
|      | Session B: Open for Impromptu Working Groups                              | TBD                    |
|      | Session C: Open for Impromptu Working Groups                              | TBD                    |
|      | Session D: Open for Impromptu Working Groups                              | TBD                    |
| 2100 | <i>Evening Adjournment</i>  |                        |

## SeaWiFS Science Team Meeting Agenda *cont.*

### **Friday, 22 January**

- 0700 Continental Breakfast, Registration
- 0800 Plenary Introduction W. Esaias
- 0810 Working Group Recommendations W. Esaias
- 0930 Resume Plenary
- 1000 *Break*
- 1015 Resume Plenary
- 1145 *Annapolis Adjournment*
- 1200 Buses Depart for GSFC and OSC Tours  
*[boxed lunches will be served on each bus]*
- 1245 GSFC Bus Drops Shoppers at Visitor's Center
- 1300 GSFC Bus Arrives at Building 28
- 1330 GSFC Bus Picks up Shoppers at Visitor's Center  
OSC Tour Begins
- 1345 GSFC Bus Arrives at Building 28
- 1400 Start of GSFC Tour in Building 28 Room E210  
Bus Departs from Building 28 for BWI
- 1500 Bus Departs from Building 28 for BWI  
Bus Departs from OSC for GSFC
- 1600 Bus Departs from Building 28 for BWI  
OSC Bus Arrives at Building 28
- 1700 Bus Departs from Building 28 for BWI
- 1800 *Tour and Demonstration Adjournment*  
Bus Departs from Building 28 for BWI  
Bus Departs from Building 28 for Annapolis

## SeaWiFS Science Team Meeting Working Group Matrix

Time	Session A	Session B	Session C	Session D
<b>Thursday 21 January 0800—1000</b>	HRPT Policies and Real Time Access (Kirk/Brown)	Round-robin Cali- bration of Optical Instruments (McClain/Mueller)	Data Products and Adding New Products (Esaías/Yentsch)	OPEN for Impromptu Working Groups (TBD)
<b>Thursday 21 January 1030—1200</b>	Data Policy, Rights, and Obligations (Esaías/Balch)	Field Deployments, <i>In Situ</i> Data Vali- dation, and Formats (Hooker/Clark)	Algorithm and Product Validation and Binning (McClain/Morel)	OPEN for Impromptu Working Groups (TBD)
<b>Thursday 21 January 1300—1500</b>	HRPT Ground Station Technology (Vermillion/Lewis)	SeaWiFS Sensor Acceptance and Calibration (W. Barnes/Gordon)	Data Distribution and Access (Zukor/Glover)	OPEN for Impromptu Working Groups (TBD)
<b>Thursday 21 January 1530—1730</b>	Optical Protocols Revisions (Esaías/Mueller)	SeaWiFS Mission Operations (Gregg/Evans)	Software Policy and Availability (Feldman/Abbott)	OPEN for Impromptu Working Groups (TBD)
<b>Thursday 21 January 1930—2100</b>	EOS Color Mission and White Paper (Esaías/Abbott)	OPEN for Impromptu Working Groups (TBD)	OPEN for Impromptu Working Groups (TBD)	OPEN for Impromptu Working Groups (TBD)

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## Working Group Session Topics

### Thursday 21 January 0800-1000

#### ***Session A, HRPT Policies and Real Time Access (R. Kirk/O. Brown)***

No Issues submitted by session chairman.

#### ***Session B, Round-robin Calibration of Optical Instruments (C. McClain/J. Mueller)***

1. What are the requirements for participation in the round-robin?
2. How are changes in the round-robin procedures proposed and then implemented?

#### ***Session C, Data Products and Adding New Products (W. Esalas/C. Yentsch)***

1. Standard level-1a data.
2. Level-2 products:
  - a) Definition of level-2 geophysical products.
3. Level-3 products:
  - a) File sizes.
4. Browse products.
5. Procedures for altering and adding new products.
6. Transition to MODIS products.

#### ***Session D, Open for Impromptu Working Groups (TBD)***



## Working Group Session Topics *cont.*

### Thursday 21 January 1030-1200

#### ***Session A, Data Policy, Rights, and Obligations (W. Esalas/W. Balch)***

1. Questions on *Dear Colleague* letter.
2. Procedure for getting on the approval list.
3. Approval for near-real time access.
4. Submission of *in situ* observations.
5. Revisions to *in situ* data policy.

#### ***Session B, Field Deployments, In Situ Data Validation, and Formats (S. Hooker/D. Clark)***

1. What is the standard data format?
2. What is the standard file naming convention?
3. Does the ship schedule cover the areas of interest?
4. How many basic measurements can be made by investigators going to sea, and can people be combined to produce complementary data sets?

#### ***Session C, Algorithm and Product Validation, and Binning (C. McClain/A. Morel)***

1. Bio-optical algorithm development:
  - a) Definition of a productivity related derived product.
  - b) Definition of a chlorophyll *a* algorithm.
  - c) Definition of *in situ* data quality control protocols.
  - d) Who should have access to SeaWiFS on-line databases?
  - e) Submission of additional historical databases.
2. Atmospheric correction algorithm development:
  - a) System requirements for operational algorithm.
  - b) Definition of the *error* field.
  - c) Provision for a CZCS-class atmospheric correction.
3. SeaWiFS level-1 and level-2 quality control:
  - a) Definition of additional level-2 quality control flags.
  - b) Definition of a cloud masking algorithm.
  - c) Definition of level-0 data quality metrics.
4. Sensor calibration:
  - a) Procedure for implementing changes in sensor calibration:
    - i) determination of change,
    - ii) comparison of different calibration techniques,
    - iii) determination of when correction is required, and
    - iv) procedure for implementing calibration change.
5. Level-3 algorithm:
  - a) *Seam* location.
  - b) Definition of binning periods.

#### ***Session D, Open for Impromptu Working Groups (TBD)***

## Working Group Session Topics *cont.*

### **Thursday 21 January 1300–1500**

#### ***Session A, HRPT Ground Station Technology (C. Vermillion/M. Lewis)***

1. SeaStar transmission characteristics.
2. New hardware needed to acquire SeaWiFS real time data.
3. Data formats (level-0).
4. OSC decryption unit (functions).
5. Possible vendors for SeaWiFS acquisition systems.
6. Software to be provided to the users by the SeaWiFS project.

#### ***Session B, SeaWiFS Sensor Acceptance and Calibration (W. Barnes/H. Gordon)***

1. Review baseline calibration and characterization requirements.
2. Examine SeaWiFS test results to-date.
3. Discuss adequacy of testing program.

#### ***Session C, Data Distribution and Access (D. Zukor/D. Glover)***

1. SeaWiFS data distribution restrictions:
  - a) Authorized users.
  - b) General science community.
2. Data pricing policy.
3. Work load models:
  - a) Ingest from SeaWiFS.
  - b) Distribution to user community.
4. Hardware configuration.
5. Product request scenarios.

#### ***Session D, Open for Impromptu Working Groups (TBD)***

## Working Group Session Topics *cont.*

### Thursday 21 January 1530-1730

#### ***Session A, Optical Protocols Revisions (W. Esalas/J. Mueller)***

1. Are the instrument protocols too stringent for most investigators?
2. Ship shadow avoidance revisions proposed by Siegel.
3.  $L_{\max}$  revision proposed by Siegel.
4. Recommendations on analysis procedures for deriving  $K_0$ ,  $\lambda$ ,  $L_{WN}(\lambda)$ , and other derived properties.
  - a) Are standard procedures necessary?
5. Are airborne measurement protocols needed.
6. Meetings required, attendees, responsibilities, and publishing plan.

#### ***Session B, SeaWiFS Mission Operations (W. Gregg/R. Evans)***

1. Command Scheduling:
  - a) GAC/LAC partitioning,
  - b) GAC record analyses,
  - c) Tilt analyses,
  - d) Gain analyses, and
  - e) Initial check-out operations.
2. Navigation:
  - a) GPS data analysis from EUVE,
  - b) Attitude determination using sensors, and
  - c) Geolocation algorithms.

#### ***Session C, Software Policy and Availability (G. Feldman/M. Abbott)***

1. What is the level of software support that is desired, expected, or required?
2. What platforms and operating systems must be supported?
3. How can the likelihood of distributing portable software be enhanced?
4. What is the best method for keeping software current?
5. What is the preferred distribution media and by what method?
6. What level of documentation is desired or required (examples)?

#### ***Session D, Open for Impromptu Working Groups (TBD)***

## Working Group Session Topics *cont.*

### **Thursday 21 January 1930–2100**

#### ***Session A, EOS Color Mission and White Paper (W. Esaias/M. Abbott)***

1. Requirements statement for EOS Color.
2. Global 1 km recorded coverage.
3. Data rights required to be able to merge these data with MODIS data and distribute freely.
4. Are any instrument changes required?
5. White paper status and outstanding inputs.

#### ***Session B, Open for Impromptu Working Groups (TBD)***

#### ***Session C, Open for Impromptu Working Groups (TBD)***

#### ***Session D, Open for Impromptu Working Groups (TBD)***